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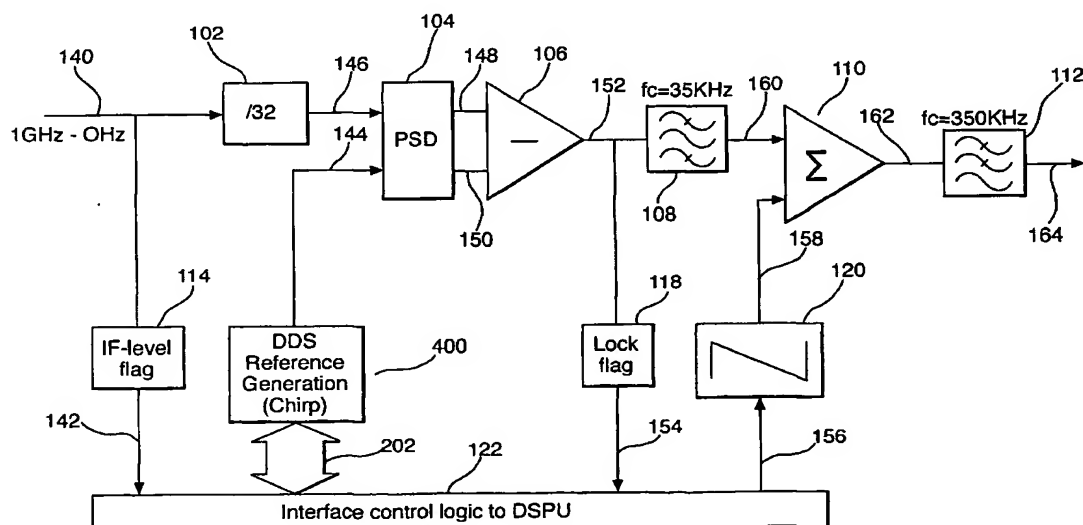
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(54) Title: WAVEFORM LINEARISER



(57) Abstract: An improved apparatus and method of generating swept frequency waveforms in the field of digital lineariser technology, using a phase-locked loop frequency synthesiser, is provided. Preferably, a ramp generator (120) is used to apply a modulation signal to the frequency control input of a voltage controlled oscillator via a summer component (110). A direct digital synthesis (DDS) reference component (400) is used to controllably produce a progressive shift in threshold crossing points of the signal (on line 144) such as to compensate for the ramp signals generated by the generator (120) which is compared with the signal (on line 146) from the reference frequency source (line 140). Advantageously, the proposed apparatus/method finds utility in various FM CW-based radar applications.

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## **ABSTRACT OF THE DISCLOSURE**

### **WAVEFORM LINEARISER**

An improved apparatus and method of generating swept frequency waveforms in the field of digital lineariser technology, using a phase-locked loop  
5 frequency synthesiser, is provided.

Preferably, a ramp generator 120 is used to apply a modulation signal to the frequency control input of a voltage controlled oscillator via a summer component 110. A direct digital synthesis (DDS) reference component 400 is used to controllably produce a progressive shift in threshold crossing points of  
10 the signal (on line 144) such as to compensate for the ramp signals generated by the generator 120 which is compared with the signal (on line 146) from the reference frequency source (line 140).

Advantageously, the proposed apparatus/method finds utility in various FM CW-based radar applications.

15 (Figure 3)